

**REMARKS**

Applicants have amended independent claims 56, 72, 88, and 100 to differently recite aspects associated with the invention, and have amended dependent claims 61, 71, 91, and 103 to make them consistent with the recitations in the other claims. Claims 56-111 are currently pending for consideration.

In the pending Office Action, claims 56, 64, 72, 88, and 100 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-38 of U.S. Patent No. 6,992,026 (the '026 patent) in view of Hoekstra et al. (Hoekstra, U.S. Patent No. 6,420,678); claims 56-57, 59-60, 63, 65, 69-73, 75-76, 79-81, and 85-87 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoekstra; claims 61-62, 77-78, 91-92, and 103-104 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoekstra in view of Chen et al. (Chen, U.S. Published Patent Application No. 2003/014570); claims 58, 64, 66, 74, 80, and 82 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoekstra in view of Piwczyk et al. (Piwczyk, U.S. Patent No. 6,376,797); claims 67 and 83 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoekstra in view of Hatangadi et al. (Hatangadi, U.S. Patent No. 6,726,631); claims 68 and 84 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoekstra in view of Hatangadi and Piwczyk; claims 88, 90, 93, 95, 97-99, 100, 102, 105, 107, and 109-111 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoekstra in view of Manor (Manor, U.S. Published Patent Application No. 2001/0035401); and claims 89, 94, 96, 101, 106, and 108 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoekstra in view of Manor and Piwczyk. Applicants respectfully traverse these rejections, at least for the following reasons.

Applicants submit that the applied references, whether taken alone or in combination, do not disclose or render obvious Applicants' claimed methods for a substrate having a front face formed with a functional device and a rear face through the substrate, comprising the step of grinding the rear face of a substrate after the step of forming the starting point region such that, after the grinding, the substrate comprises at least a portion of the modified region (independent claims 56 and 88) or at least a portion of a fracture (independent claims 72 and 100).

As an example, in the pending Office Action, claims 56, 64, 72, 88, and 100 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-38 of U.S. Patent No. 6,992,026 (the '026 patent) in view of Hoekstra. The Examiner acknowledges at page 3 of the Office Action, line 17, that the '026 patent fails to teach the grinding step after the step of forming the starting point. Nonetheless, the Examiner concludes in the subsequent sentence at page 3 of the Office Action that "[a]t the time the invention was made, it would have been obvious to a person having ordinary skill in the art to use grinding step for cutting a substrate as taught by Hoekstra in col. 2, lines 10-15) in the method dividing substrate of [the '026 patent], because such grinding process will able to divide a substrate into plurality of pieces in the laser cutting."

Applicants traverse this conclusion of obviousness for a number of significant reasons. First of all, the disclosure at col. 2, lines 10-15 of Hoekstra relates to "grinding, edge seaming, and polishing . . . to achieve desired *edge face quality*." (Emphasis added.) This grinding of the edge face is completely different from the recitation in Applicants' amended claims, which involves grinding a rear face of the substrate. In other words, Hoekstra relates to edge face

grinding whereas the present claims recite rear face grinding. These are completely different processes performed for completely different purposes.

Second, Hoekstra teaches away from any combination of the '026 patent and Hoekstra that would result in any rear face grinding. As mentioned, and as acknowledged by the Examiner, the '026 patent claims do not disclose or render obvious grinding. While Hoekstra does mention edge face grinding, it does not disclose or render obvious rear face grinding. In fact, Applicants submit that Hoekstra teaches away from rear face grinding, at least for the following reasons.

In this regard, Hoekstra discloses a method of laser processing in which heating/rapid cooling for cutting purpose is always performed in association with the formation of any modified regions within the wafer. Thus, in Hoekstra, whenever the modified regions are formed, in essentially the same process the wafer is cut into pieces via the application of heating/rapid cooling. Consequently, in Hoekstra it is impossible to perform grinding of the rear face of the wafer because, every time any modified regions are formed, the wafer is cut, which means that there is no opportunity to perform grinding as recited in Applicants' claims.

Applicants submit that because Hoekstra teaches away from rear face grinding, then one skilled in the art would not consider any of the proposed combinations involving Hoekstra to have been obvious. Among other things, it is improper to combine references where the references teach away from their combination. M.P.E.P. § 2145, citing *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

If the Examiner has any intention of maintaining the current rejections based on Hoekstra in reply to the instant Amendment, the Examiner is asked to specifically explain why each of the above-quoted portions of M.P.E.P. § 2143.01 do not apply in this instance.

In sum, the '026 patent claims 1-38 do not mention grinding, and in Hoekstra, any grinding is edge face grinding rather than rear face grinding. Moreover, Hoekstra teaches away from rear face grinding. Accordingly, Applicants submit that the claims patentability distinguish over '026 patent claims 1-38 and Hoekstra, whether viewed alone or in combination. Thus, reconsideration and withdrawal of the obviousness-type patent rejections applied to claims 56, 64, 72, 88, and 100 in the Office Action are respectfully traversed.

In view of the foregoing, Applicants respectfully submit that independent claims 56, 72, 88, and 100, and the claims dependent therefrom, patentably distinguish over the applied references of record. Accordingly, reconsideration and withdrawal of the rejections applied to the claims in the pending Office Action are respectfully requested.

Applicants also traverse the other prior art rejections applied to claims 56-111. In this regard, Applicants submit that all of the remaining rejections not discussed in detail above are based on either Hoekstra alone, or on Hoekstra taken in combination with secondary references such as Chen, Piwczyk, Hatangadi, and Manor. However, as discussed above, Hoekstra does not disclose or render obvious Applicants' claimed methods involving rear face grinding (to the contrary, Hoekstra teaches away from such grinding), and moreover, the remaining references do not make up for the deficiencies in Hoekstra.

In this regard, among the cited references, the only references or documents other than Hoekstra relied on for a teaching of grinding is US 2002/0115235 (Sawada - see page 5, line 20

of pending Office Action) and Chen (see, for example, page 7, lines 9-22, of the Office Action). However, neither Sawada nor Chen is combinable with Hoekstra because Hoekstra teaches away from the implementation of rear face grinding. See discussion above. Moreover, in Chen, for example, there is absolutely no indication that whatever grinding being carried out is performed on a rear surface as in Applicants' claims. Thus, even if these references were to be combined in the manner asserted in the Office Action , the resulting combination would still not incorporate Applicants' claimed methods comprising for a substrate having a front face formed with a functional device and a rear face through the substrate, comprising the step of grinding the rear face of a substrate after the step of forming the starting point region such that, after the grinding, the substrate comprises at least a portion of the modified region (independent claims 56 and 88) or at least a portion of a fracture (independent claims 72 and 100).

For at least the foregoing reasons, Applicants submit that the current claims patentably distinguish over the references applied in the pending Office Action. Accordingly, reconsideration and withdrawal of all of the current rejections are respectfully requested, at least for the reasons set forth above, and a favorable action is awaited.

**CONCLUSION**

In view of the foregoing, Applicants submit that the pending claims are in condition for allowance, and respectfully request reconsideration and timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

**EXCEPT** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

**DRINKER BIDDLE & REATH LLP**

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By:

  
John G. Smith  
Reg. No. 33,818

**Customer No. 055694**

Drinker Biddle & Reath LLP  
1500 K Street, N.W., Suite 1100  
Washington, DC 20005-1209  
Tel.: (202) 842-8800  
Fax: (202) 842-8465